## Abstract

A fuel injector having a housing including an inlet, an outlet, and a passageway for fuel flow from the inlet to the outlet. A coil assembly is disposed proximate the inlet. A seat is disposed proximate the outlet. A closure member is disposed in the housing and is operable by the coil assembly. The closure member includes a sleeve and an armature. The sleeve extends along a longitudinal axis and includes first and second ends, and an outer surface a first distance from the longitudinal axis. An armature is coupled to the first end of the sleeve so that the sleeve is movable with the armature. The armature includes an outer perimeter a second distance from the longitudinal axis, such that the second distance is not greater than the first distance.